

Mod. 9 Musculoskeletal Injuries

1. **What is a primary problem when treating musculoskeletal injuries?**
 - a. Many musculoskeletal injuries have a grotesque appearance, and the EMT cannot be distracted from life-threatening conditions by a deformed limb.
 - b. All musculoskeletal injuries are life threatening due to the bone bleeding, leading to hypoperfusion.
 - c. Splints do not adequately fit the patient's extremities and must be modified with padding to ensure immobilization.
 - d. Most musculoskeletal injuries are simply splinted and not a life threat to the patient.
2. **The part of the skeleton that is made up from the skull and spinal column is called the:**
 - a. appendicular skeleton.
 - b. boney skeleton.
 - c. axial skeleton.
 - d. torso.
3. **Which of the following structures connect bone ends, making joints more stable?**
 - a. Ligaments
 - b. Cartilage
 - c. Tendons
 - d. Periosteum
4. **Which of the following allows for smooth movement of bone surfaces against one another at joints?**
 - a. Smooth muscle
 - b. Ligaments
 - c. Peritoneum
 - d. Cartilage
5. **Where could you find the phalange bones?**
 - a. Upper extremities
 - b. Lower extremities
 - c. Skull and neck
 - d. Hands and feet
6. **Which of the following is a complication of bone fractures?**
 - a. Nerve damage
 - b. Swelling
 - c. Hemorrhage
 - d. All of the above
7. **Which of the following bones is found in the chest?**
 - a. Tarsals
 - b. Ilium
 - c. Sternum
 - d. Metacarpals
8. **Your patient is a 60-year-old woman who stepped off a curb and injured her ankle. Your exam shows that her left ankle is swollen and painful. Which of the following should you do?**
 - a. Explain to the patient that her ankle is fractured and you must splint her ankle to prevent further injury and reduce pain.
 - b. Explain to the patient that you cannot tell if her ankle is sprained or fractured until she is X-rayed at the emergency department, then splint the ankle.
 - c. Transport the patient immediately to a trauma center, applying high-concentration oxygen en route.
 - d. Explain to the patient that her ankle is sprained and transport her with her ankle elevated on a pillow and a cold pack applied to the injury.

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9. **Which of the following BEST describes the compartment syndrome?**
- a. A serious condition caused by the amount of equipment that must be carried in the ambulance compartments.
 - b. A life-threatening condition caused by trapping the blood flow by a fracture when the bone ends cut the blood vessels.
 - c. A serious condition caused by the bleeding and swelling from a fracture or crush injury that becomes so strong that the body can no longer perfuse the tissues against that pressure.
 - d. A non life-threatening condition caused by orthopedic injuries in which blood flow is stopped when the bone ends compress the blood vessels.
10. **Your patient is a 12-year-old female who fell onto her outstretched hands while rollerblading. She has a deformity of her forearm, about 2 inches proximal to her wrist. This injury is a result of which of the following mechanisms?**
- a. Direct force
 - b. Indirect force
 - c. Sudden acceleration
 - d. Twisting motion
11. **Which of the following is an injury to the musculature of an extremity?**
- a. Luxation
 - b. Strain
 - c. Fracture
 - d. Sprain
12. **Which of the following describes an open extremity injury?**
- a. A gunshot wound has penetrated the skin and then fractured the bone.
 - b. Bone ends have lacerated the soft tissues and skin from the inside.
 - c. The joint capsule has been torn open during a dislocation.
 - d. Both A and B
13. **A traction splint may be used on which of the following musculoskeletal injuries?**
- a. A possible fracture of the cervical spine
 - b. A possible fracture of the femur
 - c. Suspected multiple fractures of the femur, tibia, and fibula
 - d. A possible fracture of the humerus
14. **Which of the following is appropriate in the examination of a painful, swollen extremity of a conscious patient?**
- a. Gently attempting to flex the mid-portion of the bone to check for angulation
 - b. Asking the patient to see if he can bear weight on the extremity
 - c. Comparing the injured side to the uninjured side
 - d. Seeing if you can elicit crepitus on palpation
15. **Which of the following is NOT a benefit of splinting an injury to bones and connective tissues?**
- a. It prevents neurological damage due to movement of bone ends or fragments.
 - b. It may prevent a closed injury from becoming an open injury.
 - c. It restricts blood flow to the site of the injury to prevent swelling.
 - d. It reduces pain.

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16. **Your patient is a 20-year-old college student who has fallen from a third-level balcony onto a wooden deck below. The patient responds to verbal stimuli, is pale in color with moist skin, and has a very obvious deformity with protruding bone ends of his right forearm. Which of the following is the BEST sequence of intervention for this patient?**
- Provide manual in-line stabilization of the cervical spine along with assessment of breathing, pulse, and the presence of significant hemorrhage; apply high-concentration oxygen; perform a rapid trauma exam; immobilize to a long backboard; transport; and splint the extremity en route if time and resources allow.
 - Open the airway; assess breathing; check the carotid pulse; splint the forearm injury; immobilize the patient to a long backboard; apply high-concentration oxygen; and transport.
 - Provide immediate manual in-line stabilization of the cervical spine; apply high-concentration oxygen by nonrebreather mask; perform a focused history and assessment; apply the cervical collar; apply a padded board splint, sling, and swathe to the forearm injury; and transport.
 - Provide manual in-line stabilization of the cervical spine along with assessment of breathing, pulse, and the presence of significant hemorrhage; apply high-concentration oxygen; perform a rapid trauma exam; immobilize to a long backboard; and check with medical control about the need to splint the forearm injury prior to transport.
17. **When the EMT is assessing compromise to an extremity, perhaps due to an orthopedic injury, the EMT should initially check what "Six Ps"?**
- Pain, pallor, position, pulses, placement, and pressure
 - Pain, pallor, paresthesia, pulses, placement, and pressure
 - Pain, pallor, position, pulses, placement, and pad
 - Pain, pallor, paresthesia, pulses, paralysis, and pressure
18. **Your patient is an 11-year-old male who has a swollen, painful, and angulated right lower arm after falling from his bicycle onto his hands. Which of the following should be considered in the immobilization of his injured extremity?**
- Check pulse, movement, and sensation distal to the injury before and after splinting.
 - Immobilize from the shoulder to the wrist.
 - Use an upper extremity traction splint.
 - Do not attempt to realign the extremity before splinting.
19. **Which of the following is NOT a principle of splinting that must be considered by the EMT?**
- Immobilize the site of an extremity injury from the joint above it to the joint below it.
 - Splint an isolated extremity injury before moving the patient to the stretcher.
 - Check the distal neurovascular function before and after splinting.
 - Gently replace protruding bone ends back beneath the skin to prevent further contamination.
20. **A new EMT who is treating a suspected femur injury asks his partner, "How much traction should I pull?" The partner's BEST reply is which of the following?**
- No traction splint applied in the field pulls true traction; they must pull 20 pounds of countertraction.
 - Pull enough traction to give the patient some relief from the pain.
 - The amount of traction applied should be roughly 10 percent of the patient's body weight and not exceed 15 pounds.
 - The amount of traction applied should be 15 pounds.
21. **Which of the following complications may arise from properly splinting an injured extremity?**
- Converting a closed fracture to an open one
 - Compromising circulation to the extremity
 - Ignoring life-threatening problems while focusing on an extremity injury
 - All of the above

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22. **Your patient is a 3-year-old girl who is unable to move her elbow after her mother picked her up by the forearm. Proper splinting of this injury would be to immobilize from the _____ to the _____.**
- wrist; elbow
 - wrist; shoulder
 - forearm; humerus
 - fingertips; shoulder
23. **You are treating a 16-year-old skateboarder who has fallen at the skate park. She has an angulated left forearm that she has in a guarded position. When do you splint this injury?**
- En route to the hospital
 - Immediately
 - During the primary exam
 - During the secondary exam
24. **Your patient is a 28-year-old male who was ejected from his motorcycle after striking a parked vehicle. He has multiple deformities to his upper and lower extremities on both sides. Which of the following would be the BEST way to immobilize this patient's extremities prior to transport?**
- Use traction splints for the lower extremities and allow the upper extremities to be immobilized by the long backboard.
 - Use padded board splints for the upper extremities and PASG for the lower extremities.
 - Use moldable splints for the upper and lower extremities, padding any voids to fully stabilize the fractures.
 - Immobilize the patient to a long backboard without splinting the extremities individually.
25. **Your patient is a 37-year-old man who tripped while walking down a hill and now has a painful, deformed right leg. Your assessment reveals that the foot is cold and mottled in appearance. You cannot detect a pulse in the foot or ankle. Which of the following is the BEST course of action?**
- Explain to the patient that, because you cannot detect circulation in his foot, his leg will most likely have to be amputated above the site of the injury.
 - Gently attempt to straighten the leg to regain a pulse before splinting.
 - Splint the leg in the position in which it was found and transport without delay.
 - Transport rapidly to the nearest trauma center.
26. **A suspected musculoskeletal injury of the shoulder is BEST managed by which of the following techniques?**
- Placing the arm in a sling and using a triangular bandage to secure it to the body
 - Using an upper extremity traction splint
 - Placing two long padded board splints on either side of the extremity, extending from the shoulder to the wrist
 - Using a long-arm air splint
27. **The PASG may be used as a splinting device for patients with which of the following suspected injuries?**
- Hip dislocation
 - Compression fracture of the lumbar or sacral spine
 - Fractured pelvis
 - None of the above
28. **Blood at the meatus of the penis (opening of the urethra) is a sign of:**
- spinal fracture or injury.
 - pelvic trauma/fracture.
 - pelvic dislocation syndrome.
 - priapism.

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29. **Your patient is a 70-year-old male whose tractor rolled over onto him. Your assessment makes you suspicious that the patient has a fractured pelvis. Which of the following complications should you anticipate?**
- Shock
 - Damage to internal organs
 - Damage to the nerves of the lower extremities
 - All of the above
30. **A painter falls from his ladder and tells you he has dislocated his shoulder again. When you attempt to splint the shoulder it "pops back into place." What should your next step be?**
- Contact medical control for input into the best treatment for this patient.
 - Check distal CSM, apply a sling and swathe, and transport the patient.
 - Check distal CSM, apply a traction splint, and transport the patient.
 - Continue splinting and report the popping sound to the triage nurse when you arrive at the hospital.
31. **The strong white fibrous material called the periosteum:**
- covers the bones.
 - protects the perineum.
 - surrounds the heart.
 - surrounds the abdominal cavity.
32. **Which one of the following statements is incorrect?**
- Cartilage is connective tissue that covers the outside of the bone end and acts as a surface for articulation.
 - Tendons are bands of connective tissue that bind the ligaments to muscles.
 - Ligaments are connective tissues that connect bone to bone.
 - Muscles are the tissues or fibers that cause movement of body parts or organs.
33. **Which of the following is *not* a mechanism of musculoskeletal injury?**
- Direct force
 - Indirect force
 - Twisting or rotational forces
 - Extensive force
34. **Which of the following statements is *not* true?**
- A fracture is any break in a bone.
 - A comminuted break is when a bone is broken in only one place.
 - A greenstick break is an incomplete break in a bone.
 - An angulated break is when the broken bone is bent at an angle.
35. **One of the more serious conditions that EMTs are confronted with goes down as follows:**
- A fracture or crush injury causes bleeding and swelling within the extremity.**
Pressure and swelling caused by the bleeding within the muscle compartment becomes so great that the body can no longer perfuse the tissues against the pressure.
Cellular damage occurs and causes additional swelling.
Blood flow to the area is lost. The limb itself may be lost if the pressure is not relieved.
- What is this condition called?**
- Compartment syndrome
 - Crushing syndrome
 - Perfusing syndrome
 - Fracture syndrome

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36. **The sound or feeling of the ends of broken bones rubbing together is called:**
- crepitus.
 - krepitus.
 - crapilation.
 - breakilation.
37. **A method of assessing compromise to an extremity when a musculoskeletal injury is suspected is to learn and follow the six Ps. Which of the items below is *not* one of the six Ps?**
- Pain
 - Pallor
 - Paresthesia
 - Parenthesis
38. **There are general rules that apply to all types of splinting. Which of the following is *not* a general rule of splinting?**
- In order to avoid loss of use of a limb, it is important to splint before moving, even if the patient is unstable.
 - Expose the injury.
 - Assess distal CSM.
 - Align long-bone injuries to anatomical position.
39. **Which of the following is *not* a contraindication for the use of a traction splint?**
- Pelvis, hip, or knee injury
 - An avulsion or partial amputation where traction could separate the extremity
 - Injury to the lower third of the leg that would interfere with the ankle hitch
 - Severe swelling and redness at a midshaft femur
40. **Which of the following statements is *not* true concerning a pelvic wrap?**
- It can be used if the pelvis shows deformity.
 - It can be used if the pelvis shows instability.
 - It should not be used unless the patient shows signs of shock.
 - You can consider its use based on MOI.
41. **Although it can be difficult to definitively determine hip dislocation in the field, certain signs and symptoms are usually there. All of the statements below are true *except one*. Which statement is false?**
- An anterior hip dislocation would probably present with the entire lower limb rotated inward and the hip would usually be flexed.
 - A posterior hip dislocation presents with a bent knee and the foot may hang loose.
 - The posterior hip dislocation is the most common.
 - Often there is lack of sensation in the limb.
42. **Which one of the following statements is incorrect concerning a knee injury?**
- Fractures can occur to the proximal femur.
 - Fractures can occur to the proximal tibia and fibula.
 - Fractures can occur to the patella.
 - There could be pain and tenderness.
43. **Distinguishing between a knee dislocation and a patella dislocation can sometimes be difficult. Which of the following statements is *not* true?**
- In a patellar dislocation, the knee will be stuck in flexion but the knee cap will not be displaced.
 - In a knee dislocation, the tibia is forced anteriorly or posteriorly in relation to the distal femur.
 - You should always check for a distal pulse.
 - The lack of a distal pulse could be a signal of a real emergency.

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44. **A pillow is frequently used to splint an ankle or foot injury. It is effective, rapid, and can be used for most patients. Its main weakness is:**
- a. it requires three people to apply.
 - b. you might not have a pillow on your ambulance.
 - c. you are not immobilizing the knee and the joint adjacent to the ankle.
 - d. it is hard to access distal pulses after application.
45. **Which one of the following definitions is incorrect?**
- a. A sprain is the stretching and tearing of ligaments.
 - b. Tendons connect muscles to ligaments.
 - c. Another name for manual traction is tension.
 - d. Joints are places where bones articulate.

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22. c. forearm; humerus
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24. d. Immobilize the patient to a long backboard without splinting the extremities individually.
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26. a. Placing the arm in a sling and using a triangular bandage to secure it to the body
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